

LIST OF CURRENT CLAIMS

Claims 1-30 (Canceled)

31. (New) A method of producing a multilayer seal, comprising the steps of:

- preparing a plurality of substantially planar sheets;
- obtaining at least one channel on at least one face of at least one of said sheets;
- placing at least a first and a second of said sheets into close mutual contact so that said at least one face with said channel in said first sheet faces said second sheet;
- sealing the edges of said first and second sheets so that the volume confined between said first and second sheets is hermetically isolated from the outside environment;
- bringing said hermetically isolated volume to a preset pressure value.

32. (New) The method as claimed in claim 31, wherein said volume is connected with a pressure detector.

33. (New) The method as claimed in claim 31, wherein a plurality of channels, arranged parallel to one another or in serpentine or in a grid or radially, are obtained on at least one face of at least one of said sheets.

34. (New) The method as claimed in claim 31, wherein said sheets forming the layers of the multilayer seal are substantially rectangular metal sheets.

35. (New) The method as claimed in claim 31, wherein, after attainment of said channels, said sheets are submitted to a shaping step to obtain corresponding hollow cylindrical bodies, and wherein said sheets are superimposed by placing the obtained cylinders inside one another.

36. (New) The method as claimed in claim 35, wherein said shaping step is obtained by means of a curving process followed by welding along two contiguous edges.

37. (New) The method as claimed in claim 35, wherein after said shaping, said cylinders are submitted to a deformation step to obtain a corrugated profile.

38. (New) The method as claimed in claim 35, wherein said edges are sealed by welding through the interposition of a corresponding first and second insert.

39. (New) The method as claimed in claim 31, wherein said sheets forming the layers of the multilayer seal are substantially disc-shaped metal sheets.

40. (New) The method as claimed in claim 39, wherein said discs are joined together along their circumferential edges by welding through the interposition of a corresponding insert.

41. (New) The method as claimed in claim 39, wherein after attainment of said channels said discs are submitted to a deformation step to obtain a corrugated profile.

42. (New) The method as claimed in claim 39, wherein said deformation step is obtained through a pot die forming or roll forming process.

43. (New) The method as claimed in claim 31, wherein said channels are obtained through mechanical deformation, laser technology, chemical corrosion, deposition of material or application of spacers onto the surface of said sheet.

44. (New) The method as claimed in claim 31, wherein said channels have half-circular, rectangular or triangular cross-sectional shapes.

45. (New) The method as claimed in claim 31, wherein said volume is brought to a pressure above/below the external pressure by means of a compression/suction device.

46. (New) A multilayer seal comprising at least a first and a second superimposed layers, in close mutual contact and sealed along the edges so as to define between said layers a corresponding volume, which is hermetically isolated from the surrounding

environment and in which the pressure is set to a preset value, characterised in that at least one face of said layers facing said volume is provided with at least one channel.

47. (New) The seal as claimed in claim 46, wherein said seal comprises a pressure detector connected with said volume.

48. (New) The seal as claimed in claim 46, wherein a plurality of channels, arranged parallel to each other or in serpentine or in a grid or radially, are obtained on at least one face of at least one of said layers.

49. (New) The seal as claimed in claim 46, wherein said layers are hollow cylindrical bodies of sheet metal.

50. (New) The seal as claimed in claim 49, wherein said hollow cylindrical bodies are sealed along their edges by welding through the interposition of a corresponding first and second insert.

51. (New) The seal as claimed in claim 50, wherein said first insert is a metal ring, said inner cylinder and said outer cylinder being welded to the inner wall and to the lower edge of said metal ring, respectively.

52. (New) The seal as claimed in claim 50, wherein said second insert is a metal cover, said inner cylinder and said outer cylinder being welded to the side edge of said metal cover.

53. (New) The seal as claimed in claim 46, wherein said layers are disc-shaped members of sheet metal.

54. (New) The seal as claimed in claim 53, wherein said discs are sealed along their edges by welding through the interposition of a corresponding ring-shaped metal insert.

55. (New) The seal as claimed in claim 54, wherein said ring has, on its inner wall, an annular groove communicating with said at least one channel.

56. (New) The seal as claimed in claim 55, wherein said annular groove communicates with the outside through a radial bore in said ring.

57. (New) The seal as claimed in claim 56, wherein said radial bore is connected, outside said ring, with a pressure detector through a capillary.

58. (New) The seal as claimed in claim 51, wherein said ring has, on its inner wall, an annular groove communicating with said at least one channel.

59. (New) The seal as claimed in claim 58, wherein said annular groove communicates with the outside through a radial bore in said ring.

60. (New) The seal as claimed in claim 59, wherein said radial bore is connected, outside said ring, with a pressure detector through a capillary.

61. (New) The seal as claimed in claim 46, wherein said volume is brought to a pressure above/below the external pressure.

62. (New) The seal as claimed in claim 46, wherein at least one free layer is provided in said volume.

63. (New) A valve for fluids, including at least a multilayer seal as claimed in claim 46.